SECTION J, ATTACHMENT 4

PERFORMANCE SPECIFICATION 0701

FOR

CLOSED CIRCUIT TELEVISION ASSESSMENT EQUIPMENT

FOR THE

INTEGRATED COMMERCIAL INTRUSION DETECTION SYSTEM-IV (ICIDS-IV)

04 May 2007

Table of Contents

1. SCOPE.

1.1 Identification.

This Performance Specification (PS) covers the Closed Circuit Television (CCTV) assessment subsystem of the Integrated Commercial Intrusion Detection System (ICIDS).

1.2 Subsystem Description.

The CCTV subsystem functions as a part of the ICIDS to allow visual assessment of intrusion alarm sites, in near real time, at a central monitoring location. The subsystem is used to capture the scenes at the alarm sites, transmit images to the monitoring location, process the images through switching devices, and display the multiple images on multiple monitors for operator assessment. The subsystem has the capability to uniquely identify each signal from each alarm site and record it for future use.

1.3 Subsystem Overview.

There are two (2) applications of the CCTV subsystem:

1) Exterior Intrusion Alarm Sites
2) Interior Intrusion Alarm Sites

Unless otherwise specified, the requirements pertain to all applications.

2. APPLICABLE DOCUMENTS.

Section 2 of ICIDS-PS-0700 shall apply with the following additions.

The following documents of the issue in effect on the date of request for proposal form a part of this description to the extent specified herein. In the event of a conflict between the text of this document and the references cited herein, the text of this specification takes precedence.

2.1 Government Documents.

Military.

UFGS 28 23 23.00 10, Part 2	April 2006	Closed Circuit Television Systems
ICIDS-PS-0700	04 May 2007	Performance Specification (PS) for Integrated Commercial Intrusion Detection System (ICIDS) Command, Control, and Display Subsystem (CCDS)

2.2 Non-Government Documents.

2.2.1 Consumer Electronics Association (CEA).

CEA-310-E	December 2005	Racks, Panels and Associated Equipment
CEA-330	December 2004	Electrical Performance Standards for Closed Circuit Television Camera 525/60 Interlaced 2:1

2.2.2 Underwriters Laboratories.

UL 639	September 30, 2002	Intrusion-Detection Units
UL 1076	March 21, 2005	Proprietary Burglar Alarm Units and Systems
UL 1492	May 28, 2004	Audio-Video Products and Accessories

2.2.3 Institute for Electrical and Electronics Engineers (IEEE).

IEEE C62.41-1991	1991	IEEE Recommended Practice for Surge Voltages

2.3 Order of Precedence.

In the event of a conflict between the text of this specification and the references cited, the text of this specification takes precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless there is a specific exemption.

3. REQUIREMENTS.

3.1 Description.

The CCTV System is to be used in conjunction with the Integrated Commercial Intrusion Detection System (ICIDS), as defined in ICIDS-PS-0700, to allow a console operator to visually assess the causes of intrusion alarms at remote areas. The CCTV configuration described herein is intended to illustrate functional requirements only and is not intended as a design constraint. The CCTV shall make maximum use of existing components and materials and leverage existing technologies to meet or exceed the requirements of this specification. While the requirements of this specification are stated in terms of conventional equipment, innovation and application of emerging technologies should be applied where possible. Utilization of infrared cameras and unitized pan tilt zoom mounts are examples of this philosophy.

3.2 Reliability.

The CCTV equipment shall have a minimum Mean-Time-Between-Failures (MTBF) of 2500 hours for an installation with 128 video input monitor area equipment and 18,000 hours for remote area equipment (combination of camera, lens, enclosure and mounting) equipment.

3.3 Construction.

UL 1492 shall apply.

3.4 Maintainability.

3.4.1 Maintenance Support.

The Mean Time To Repair (MTTR) of any CCTV component shall not exceed 0.5 man-hours.

3.4.2 Maintenance Ratio.

The maintenance ratio for high capacity (128 video inputs) monitor area equipment shall not be more than .0004. The maintenance ratio for remote area equipment (combination of camera, lens, enclosure and mounting) equipment shall be not more than .000056.

3.5 Performance Characteristics.

All items shall either be UL listed or meet the requirements of UL standard 1492, as applicable.

3.5.1 Camera.

The video camera shall conform to EIA-330 specifications. All electronic components shall be solid state. The camera shall have a back focus. Cameras shall be capable of supporting Pan Tilt Zoom (PTZ) as required.

3.5.1.1 Signal-to-Noise Ratio.

The signal-to-noise ratio shall comply with UFGS 28 23 23.00 10, Part 2.

3.5.1.2 Distortion.

The camera shall comply with EIA-330.

3.5.1.3 Lens Mount.

The lens mount shall be a C or CS mount, compatible with the cameras selected.

3.5.1.4 Power.

The camera shall be capable of operating on supplied facility power. Nominal voltages and frequencies are: 1) 120/208/240 Vac, 60 Hz; or 2) 240 Vac, 50 Hz.

3.5.1.5 Image Array.

The camera shall have a solid state imaging array with a minimum effective picture element of 768 (H) x 494 (V). The image array shall be free of blemishes as defined by EIA-330.

3.5.1.6 Resolution.

The camera shall comply with UFGS 28 23 23.00 10, Part 2. The resolution shall not vary over the life of the camera.

3.5.1.7 Sensitivity.

The camera shall comply with UFGS 28 23 23.00 10, Part 2.

3.5.1.8 Connectors.

The camera connectors shall interface with other CCTV system components and be compatible with the ICIDS communication links in use.

3.5.1.9 Automatic Circuits.

The camera shall have automatic black level, automatic white clipper, and automatic gain control.

3.5.1.10 Camera Enclosures.

Any ancillary enclosure, with mounting hardware, needed to install the camera shall be provided as part of the enclosure. All enclosures must be capable of supporting Pan Tilt Zoom (PTZ).

3.5.1.10.1 Indoor Camera Enclosure.

The enclosure shall be a tamper resistant enclosure for indoor camera operation. It shall be equipped with tamper resistant latches, and shall be supplied with the proper mounting brackets for the specified camera and lens.

3.5.1.10.2 Outdoor Camera Enclosure.

The outdoor camera enclosure shall be used to provide a condensation free environment for camera operation under exterior conditions. The enclosure shall be equipped with any supplemental camera mounting blocks needed to position the camera and lens to maintain the proper optical centerline. A mounting bracket, which can be adjusted to center the weight of the enclosure and camera, shall be provided as part of the enclosure.

3.5.1.11 Lenses.

Camera lenses shall be provided with the camera and selected to provide coverage of the required field of view. The camera and lens shall be equipped with an auto-iris mechanism. Lenses shall not be used on a camera with an image format larger than the lens is designed to cover.

3.5.1.12 Video Monitors.

The monitors shall display color and conform with UFGS 28 23 23.00 10, Part 2.

3.5.1.12.1 Power.

The monitors shall be capable of operating on supplied facility power. Nominal voltages and frequencies are: 1) 120/208/240 Vac, 60 Hz; or 2) 240 Vac, 50 Hz.

3.5.1.12.2 Display Size.

The monitor shall have a display size of 15 inches or greater, measured diagonally.

3.5.1.12.3 Controls.

Controls used during normal operations shall be accessible from the front panel.

3.5.1.12.4 Monitor Mounting.

Site specific conditions and user operating standards require that monitor enclosures and mounting configurations be flexible. Monitors may be mounted in an EIA standard rack or use wall or ceiling mounting.

3.5.1.13 Stored Video Monitor.

The CCTV system shall provide an additional monitor for assessment of stored video. This monitor may also be manually selected and used for alarm assessment. This monitor shall be identical with the other CCTV monitors.

3.5.1.14 Video Switcher.

Electronic components, subassemblies, and circuits of the switcher shall be solid state. The switcher shall be a modular system that will allow for expansion or modification of inputs, outputs, alarm interfaces, and secondary control stations by addition of appropriate modules. Switcher components shall be capable of operating on either of the following nominal voltages and frequencies depending on available facility power: 120/208/240 Vac 60 Hz or 240 Vac 50 Hz switchable either manually or automatically. All components, modules, cables, power supplies, software, and other items needed for a complete and operable CCTV switching system shall be provided.

3.5.1.14.1 Software.

If the video switcher is software programmable, the software shall be supplied as part of the switcher. The software shall be installed in the switcher and shall be configured as required by the site design. Changes or alteration of features under software control shall be accomplished through on-site software programming. The switcher shall retain the current program and camera-monitor assignments in the event of power loss and shall not require reprogramming in order to restart the system.

3.5.1.14.2 Switcher Matrix.

The switcher shall be programmable, capable of switching any video input to any video output and have a switch matrix capacity of at least 128 video inputs. The video outputs shall be routed to the assessment monitors, as well as to the stored video monitor, as described. The video input capacity shall be expandable in increments of 64.

3.5.1.14.3 Alarm Interface.

The video switcher shall have an alarm interface compatible with the Primary Monitor Console (PMC) described in ICIDS-PS-0700. The CCTV assessment system shall accept commands from the PMC to display remote area camera video on up to four monitors of an automatic console selected or manually selected remote area. The interface shall have an automatic call-up feature whereby the receipt of an alarm from a remote area shall cause the video from that remote area to be displayed in near real time on the monitors. The monitors shall be blanked unless video is manually commanded or auto commanded.

3.5.1.14.4 Control Keyboards.

Any required control and programming keyboard(s) for the video switcher shall be supplied at the ICIDS security monitoring station. The control keyboard shall provide the interface between the operator and the CCTV system and shall relay commands to the switcher. It shall provide control of the video switcher functions needed for operation and programming the switcher. A program keyboard, if required, shall include, but not be limited to providing the following functions: programming the switcher, annotation programming, and manual video call-up. If the switcher requires an additional keyboard for system management functions, it shall be supplied with the switcher.

3.5.1.14.5 Accessory Control Equipment.

The video switcher shall be equipped with signal distribution units, pre-positioning cards, expansion units, cables, software or any other equipment needed to ensure the CCTV system is complete and fully operational.

3.5.1.15 Video Signal Equipment.

Electrically powered video signal equipment shall be capable of operating on either of the following nominal voltages and frequencies depending on available facility power: 120/208/240 Vac 60 Hz or 240 Vac 50 Hz switchable either manually or automatically. The equipment shall be furnished with power supplies and mounting equipment, as needed.

3.5.1.15.1 Ground Loop Correctors.

Ground loop correctors shall eliminate the measured ground loop interference in hard wire video transmission lines. They shall pass the full transmitted video bandwidth with no signal attenuation or loss. Ground loop corrector types include Clamps, Isolation Transformers, Isolation Amplifiers, and Differential Correctors.

3.5.1.15.2 Video Loss/Presence Detector.

The video loss/presence detector shall monitor video transmission lines for the presence of the video signal. The detector shall annunciate an alarm when the video signal drops below a pre-set threshold level. The threshold level shall be adjustable for each video channel via a front panel control and reset. The video loss alarm shall be annunciated at the status display. The alarm indication shall be maintained until proper video has been established.

3.5.1.15.3 Video Equalizing Amplifier.

The video equalizing amplifier shall be designed to correct loss in video signal level and high frequency attenuation, if caused by long distance video signal transmission over hard wire systems. The amplifier shall have independent signal gain and equalization controls. The amplifier shall be capable of equalizing at least 900 meters of RG-11/U flexible coaxial armored or unarmored cable. The amplifier shall provide a minimum of 6 dB of video gain and 12 dB of high frequency compensation. Bandwidth shall be 10 MHz or greater and

frequency response to 8 MHz shall be plus or minus 1 dB or less. Hum and noise shall be 50 dB below 1 volt peak-to-peak or better. Video inputs shall be 75 ohm, unbalanced, terminating differential grounded. Video outputs shall be 75 ohm, differential, source terminated, 1 volt peak-to-peak. Output isolation shall be 40 dB or greater at 5 MHz.

3.5.1.15.4 Video Distribution Amplifier.

The video distribution amplifier shall be designed to distribute a single, 75 ohm; unbalanced video signal to a minimum of four - 75 ohm, source terminated video outputs. It shall have not less than 3 dB of gain adjustment for the video outputs. Output isolation shall be 40 dB or greater at 5 MHz. Bandwidth shall be 10 MHz or greater and frequency response to 8 MHz shall be plus or minus 0.5 dB or less. Hum and noise shall be 55 dB below 1 volt peak-to-peak or better.

3.5.1.15.5 Video Annotation Equipment.

Video annotation equipment shall be provided. The annotation shall be alphanumeric and programmable for each video source. Annotation to be generated shall include, but not be limited to: individual video source identification, time (hour, minute and second) in a 24 hour format, date (year, month and day), and a unique user-defined title with at least 8 characters. The annotation shall be inserted onto the source video so that both shall appear on a monitor or the digital video storage equipment. The lines of the annotation shall be movable for horizontal and vertical placement on the video picture. The annotation shall be automatically adjusted for time and date. Programmed annotation shall be retained in memory in the event of AC power loss.

3.5.1.15.6 Digital Video Storage and Playback Equipment.

3.5.1.15.6.1 Digital Video Recorder (DVR).

The DVR shall be specifically designed as a time lapse recorder for use in security systems. It shall be capable of operating on either of the following nominal voltages and frequencies depending on the available facility power: 120/208/240 Vac 60 Hz or 240 Vac 50 Hz. Recording resolution of the DVR, shall not be less than 720 x 240 (National Television System Committee - NTSC) or 720 x 288 (Phase Alternating Line - PAL). The DVR shall annunciate malfunction of the recorder to the operator.

The recorder shall provide a connector for alarm trigger signal input.

3.5.1.15.6.2 Recording and Playback.

The DVR and/or its media shall be capable of storing 240 hours or more of video. It shall have at least 6 user selectable time-lapse record speeds. An alarm from the PMC shall automatically activate the recorder. The recorder shall begin recording in 1 second or less. The DVR shall put a cue mark or digital watermark on storage media at the beginning of an alarm event. The alarm event record time shall be selectable for up to 3 minutes of automatic recording as a minimum. These events will be flagged for easy access by reviewing authority. A record-lock feature shall be provided which will protect the DVR against tampering with the storage and power controls once recording has started. Playback functions shall include: alarm, fast forward search, fast reverse search, reverse/fast forward, play, slow motion or step field/frame, and pause/still.

3.5.1.16 Racks.

The monitor area components described in this Performance Specification shall be capable of being rack mounted. The rack(s) shall conform to EIA-310.

3.5.1.17 Enclosures.

Enclosures of all components shall conform to the Construction, All Television Equipment section and the Enclosures section of UL 1492.

3.5.1.18 Camera Support Equipment.

3.5.1.18.1 Interior Support Equipment.

For cameras mounted in interior locations, with or without interior enclosures, the camera shall be wall or ceiling mounted. The camera mount shall have an adjustable head for mounting the camera and be of sufficient length to allow for free and full adjustment of the camera.

3.5.1.18.2 Exterior Support Equipment.

The camera and lens contained in an environmentally sealed enclosure shall be installed on a camera support as defined in the subparagraphs below. Any ancillary mounting hardware needed

to install the support and install the camera on the support shall be provided as part of the support. All exterior support systems shall provide easy access for camera installation and maintenance.

3.5.1.18.2.1 Cantilever Camera Support.

The camera mounting pole shall be a straight or hinged, cantilever corrosion resistant pole with counterweights and mounting base. All fittings shall be of corrosion resistant material. The pole shall be capable of supporting the camera and enclosure and shall be rated for a wind load of 161 km per hour. The camera mounting plate shall locate the camera 4.6 meters vertically from the base and 2.7 meters horizontally from the centerline of the pole to the centerline of the camera. The pole shall have an internal wiring harness that routes the video, sync and power between the pole base and camera mount. The wiring harness shall be compatible with the camera to be mounted on the pole. Surge protection shall be provided at the pole between the wiring harness and the incoming electronic signal lines and power line. The pole shall have a weatherproof AC power service outlet that is surge protected and has a ground fault interruption device. Separate circuit breakers shall be provided for camera power and service outlet AC power.

3.5.1.18.2.2 Straight Camera Pole.

The camera mounting pole shall be either a straight corrosion resistant pole or a hinged and counterweighted straight corrosion resistant pole and mounting base. All fittings shall be of corrosion resistant material. The pole shall be capable of supporting the camera and enclosure and shall be rated for a wind load of 161 km per hour. The camera mounting plate shall locate the camera 4.7 m vertically from the base and 0.5 m horizontally from the centerline of the pole to the centerline of the camera. The pole shall have an internal wiring harness that routes the video, sync and power between the pole base and camera mount. The wiring harness shall be compatible with the camera to be mounted on the pole. Surge protection shall be provided at the pole between the wiring harness and the incoming electronic signal lines and power line. The pole shall have a weatherproof AC power service outlet that is surge protected and has a ground fault interruption device. Separate circuit breakers shall be provided for camera power and service outlet AC power.

3.5.1.18.2.3 Wall Mount.

The camera mount shall have an adjustable head for mounting the camera and be of sufficient length to allow for free and full adjustment of the camera. The wall mount and head shall be capable of supporting the camera and enclosure. The wall mount and head shall be constructed of corrosion resistant materials.

3.5.2 Interchangeability.

The CCTV assessment equipment shall:

a. Be interchangeable with any like equipment.
b. Not have soldered connections between any replaceable subassemblies.

3.6 Human Factors Engineering (HFE).

Paragraph 3.8 of ICIDS-PS-0700 shall apply.

3.7 Safety.

The CCTV shall not expose operators, administrators, or maintenance personnel to electrical or mechanical hazards.

3.8 Environmental Requirements.

3.8.1 Natural Environment.

The components of the CCTV shall withstand environmental conditions, or combinations thereof, as follows:

3.8.1.1 Interior Components.

3.8.1.1.1 Non-Operating Conditions.

There shall not be any damage in any temperature between -30C and +60C.

3.8.1.1.2 Operating Conditions.

a. Temperature. The CCTV components shall be able to operate, as specified herein, in any temperature between +10C and +40C.

b. Relative Humidity. The CCTV components shall be able to operate, as specified herein, in any relative humidity between 20% and 85% (non-condensing).

3.8.1.2 Exterior Components.

3.8.1.2.1 Non-Operating Conditions.

There shall not be any damage in any temperature between -40C and +60C.

3.8.1.2.2 Operating Conditions.

a. Temperature. The CCTV components shall be able to operate, as specified herein, in any temperature between -10C and +50C.

b. Relative Humidity. The CCTV components shall be able to operate, as specified herein, in any relative humidity between 20% and 85% (non-condensing).

c. Rain. The CCTV exterior components shall not be damaged and shall operate, as specified herein, when tested for one hour as specified in UL 639, Section 57.

d. Dust. The CCTV exterior components shall not be damaged and shall operate, as specified herein, when tested for one hour as specified in UL 639, Section 58.

3.8.2 Impact Conditions.

The CCTV components shall not be damaged and shall operate, as specified herein, when subjected to the jarring test, as specified in UL 1076 Section 39.

3.8.3 Vibration Conditions.

The CCTV shall not be damaged by vibration when tested as specified in UL 639, Section 37.

3.9 Electromagnetic Compatibility.

3.9.1 Electromagnetic Radiation.

The CCTV components shall comply with the requirements of Federal Communication Commission (FCC) Standard Part 15, Class B equipment.

3.9.2 Induced Environment.

The CCTV components shall meet lightning and EMI transient requirements of UL 1076, Section 44 and 45.

3.9.3 Surge Protection.

3.9.3.1 Power Lines.

All equipment connected to AC power shall be surge protected. Equipment protection shall meet the requirements of ANSI C62.41. Fuses shall not be used for protection.

3.9.3.2 Video and Sync Signal Transmission Lines.

All electrical cables used for sync and video transmission shall include protective devices to safeguard the CCTV equipment against surges. The surge suppression devices shall not attenuate the video or sync signal under normal conditions. Fuses shall not be used for surge protection.

3.10 Finish.

Unless otherwise specified, the portions of the components subject to corrosion shall be cleaned, treated and painted.

3.11 Identification Plate or P/N Marking.

All components of the CCTV shall be identified with make, model/part number and serial number in accordance with UL 1076.

3.12 Workmanship.

The workmanship shall be in accordance with best commercial standards and practices as specified in UL 1076. These requirements are applicable to wiring, welding, brazing, plating, riveting, finishes, machine operations, screw assemblies, and freedom of parts from burrs, sharp edges, or any other damage or defect that could make the part (or equipment) unsuitable for the purpose intended.

4. VERIFICATION.

Verification is the process of inspection to show that the CCTV system, while functioning within the ICIDS, meets the requirements of this specification. All inspection results shall be documented in contractor prepared reports. The Government reserves the right to perform any of the inspections set forth in this specification, where such inspections are

deemed necessary to ensure supplies and services conform to the prescribed requirements.

4.1 Methods of Verification.

Table 1 provides the methods utilized to accomplish verification including:

a. Contractor performed analysis (C/A)is an element of verification that utilizes established technical or mathematical models or simulations, algorithms, charts, graphs, circuit diagrams, or other scientific principles or procedures to provide evidence that the stated requirements were met. An "x" in the C/A column of Table 1 indicates that details of the analysis performed by the Contractor shall be provided in the Test Plan and the analysis shall be included in the Test Report.

b. Contractor performed examination (C/E) is an element of verification and inspection consisting of investigation, without the use of special laboratory appliances or procedures, of items to determine conformance to specified requirements. Examination is generally nondestructive and typically includes the use of simple physical manipulation, mechanical and electrical gauging and measurement. An "x" in the C/E column of Table 1 indicates that the Contractor conducted examination shall be included in the Test Plan, and the results of the examination shall be included in the Test Report.

c. Contractor performed test (C/T) is an element of verification and inspection which generally denotes the determination, by technical means, of the properties or elements of items, including functional operation, and involves the application of established scientific principles and procedures. An "x" in the C/T Column of Table 1 indicates that the Contractor conducted test shall be included in the Test Plan. Details shall be provided in the Test Procedure, and the results of the tests shall be included in the Test Report.

4.2 Performance Verification Test (PVT).

Performance Verification Test includes:

4.2.1 Performance Verification Test – 1

Performance Verification Test – 1 includes analysis, examination, and PVT-1 of the fully integrated ICIDS-IV system consisting of at least one component of each hardware/software item. The Contractor shall conduct the test, in accordance with (IAW) Government approved test plans and procedures and using the test methods described in Table 1, to verify the ICIDS system performance.

4.2.2 Installed Performance Verification Test – 2

Performance Verification Test – 2 includes analysis, examination, and PVT-2 of the first installed ICIDS-IV system to verify performance prior to Government acceptance. Contractor generated, Government approved test plans and test procedures shall be utilized using the test methods described in Table 1 to verify acceptable system performance.

4.2.3 Installed System Acceptance Test

Installed System Acceptance Test includes analysis, examination, and System Acceptance Test (SAT) of each installed ICIDS-IV system, subsequent to the first system, to verify performance prior to Government acceptance. Contractor generated, Government approved test plans and procedures shall be utilized using the test methods described in Table 1 to verify acceptable system performance.

TABLE 1 : Methods to Accomplish Verification

Paragraph	C/A	C/E	C/T
3.5.1 Camera		x	
3.5.1.1 Signal-to-noise-ratio	x		
3.5.1.2 Distortion	x		
3.5.1.3 Lens mount.		x	
3.5.1.4 Power.			x
3.5.1.5 Image array	x		
3.5.1.6 Resolution	x		

Paragraph	C/A	C/E	C/T
3.5.1.7 Sensitivity	x		
3.5.1.8 Connectors		x	
3.5.1.9 Automatic circuits			x
3.5.1.10 Camera enclosures		x	
3.5.1.10.1 Indoor Camera Enclosure		x	
3.5.1.10.2 Outdoor Camera Enclosure		x	
3.5.1.11 Lens	x		
3.5.1.12 Video monitor			x
3.5.1.13 Stored Video Monitor			x
3.5.1.14 Video switcher			x
3.5.1.15 Video signal equipment			x
3.5.1.16 Racks		x	
3.5.1.17 Enclosures		x	
3.5.1.18 Camera Support Equipment			x
3.5.2 Interchangeability.		x	
3.6 HFE.		x	
3.7 Safety.		x	
3.8 Environmental Requirements			x
3.9 Electromagnetic Compatibility			x
3.10 Finish.		x	
3.11 ID Plate or P/N Marking.		x	
3.12 Workmanship.		x	

5. DEFINITIONS.

Definitions of terms as used in this specification.

5.1 Damage.

Damage is defined as deformation, corrosion, loosening of parts, breakage, change of fit of any part, physical change which impairs the mechanical integrity of the component, evidence of delamination or water penetration into integrated circuits, printed circuit boards or parts resulting in non-conformance of a component to the provisions of this performance specification.